REMARKS/ARGUMENTS

Applicants amended claims 15 and 29 to remove the limitation reference numerals.

The Examiner requested that Applicants submit an Abstract. (Office Action, pg. 2) Applicants attach hereto an Abstract as requested.

1. Amended Claims 32-46 Comply with 35 U.S.C. §101

The Examiner rejected claims 32-46 as directed to non-statutory subject matter (35 U.S.C. §101 on the grounds the article of manufacture does not recite programs tangibly embodied on a computer readable medium. (Office Action, pg. 2)

To overcome this rejection, Applicants amended claim 32 to recite that the "article of manufacture" comprises "at least one of a hardware device having hardware logic and a computer readable storage medium having computer executable code". This added requirement is disclosed on at least para. 21, pgs. 9-10 of the Specification. Applicants submit that this amendment limits the article of manufacture to recognized tangible subject matter. Applicants request the Examiner to withdraw this rejection.

2. Claims 1-46 are Patentable Over the Cited Art

The Examiner rejected claims 1-46 as anticipated (35 U.S.C. §102(b)) by Coile (U.S. Patent No. 6,061,349). Applicants traverse for the following reasons.

Independent claims 1, 15, 29, and 32 require: maintaining an initial configuration assigning multiple local interfaces to one initial local address; for each local interface, receiving a remote address of a remote interface on at least one remote device to which the local interface connects; and using the initial local address to identify the local interfaces assigned to the initial local address in response to receiving a same remote address for each remote interface connected to the local interfaces assigned the initial local address.

The Examiner cited col. 4, lines 26-44 of Coile as disclosing the claim requirement using the initial local address to identify the local interfaces assigned to the initial local address in response to receiving a same remote address for each remote interface connected to the local interfaces assigned the initial local address. (Office Action, pg. 3)

The cited col. 4 mentions:

> An IP packet sent by a user for the purpose of sending data to an existing connection or establishing a connection contains an IP address in its header for the destination machine to which the connection is made and also a port number for the destination machine. The IP address is obtained from a Domain Name Service (DNS) server that returns an IP address for the domain name selected by the user. The port number is selected by the user to be either a well known port or else some other port which the user knows has a certain daemon running on it with which the user desires to interact. The present invention implements a plurality of internet sites on a single server by running all of the daemons for each internet site on a different set of ports that are defined for that site. A "Local Director" is provided to intercept packets which are directed to certain ports by a user. Once a packet from a user is intercepted, the Local Director translates the destination port number specified by the user to the destination port number which corresponds to the port on which a server is running the daemon for the user specified port of the user specified destination IP address.

The cited col. 4 mentions that a packet may have an IP address and a port number, and that a server uses different ports to run different internet sites, and that a local director in the server translates a destination port specified port to the port number corresponding to the port on which server is running a daemon.

Nowhere does this cited col. 4 anywhere disclose or mention the claim requirement that an initial local address to which multiple local interfaces are initially assigned are used to identify local interfaces assigned to the local address in response to the local interfaces receiving the same remote address for each connected remote interface. This would mean that an initial local address is used to identify local interfaces connected to remote interfaces having the same remote address.

The cited col. 4 discusses how a packet may have an IP address and port number and that different port numbers are used. However, there is no disclosure that an initial local address is used to identify local interfaces if those local interfaces connect to remote interfaces having the same remote address. There is no disclosure in the cited col. 4 that multiple local interfaces are identified by the initial local address in the initial configuration when those local interfaces connect to remote interfaces having the same remote address. In fact, the cited col. 4 nowhere discloses or mentions how to determine when to use the same local address for multiple local interfaces. Instead, cited col. 4 discusses how to translate user port to a port on which the server is running the daemon for the user specified port.

Accordingly, claims 1, 15, 29, and 32 are patentable over the cited art because the cited Coile does not disclose all the requirements of these claims.

Claims 2-14, 16-28, 30, 31, and 33-46 are patentable over the cited art because they depend from one of claims 1, 15, 29, and 32, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide further grounds of patentability over the cited art.

Claims 2, 16, 30, and 33 depend from claims 1, 15, 29, and 32, respectively, and additionally require generating at least one identifier in response to receiving multiple remote addresses from the remote interfaces connected to the local interfaces and assigning different identifiers to the local interfaces previously assigned the initial local address in response to generating the at least one identifier.

The Examiner cited col. 4, lines 45-67 of Coile as disclosing the claim requirement of generating at least one identifier in response to receiving multiple remote addresses from the remote interfaces connected to the local interfaces. (Office Action, pg. 3) Applicants traverse.

The above discussed cited col. 4 mentions that a packet may have an IP address and a port number, and that a server uses different ports to run different internet sites, and that a local director in the server translates a destination port specified port to the port number corresponding to the port on which server is running a daemon.

Nowhere does the cited col. 4 disclose that at least one identifier is generated when multiple remote addresses are received from remote interfaces connected to the local interfaces having the initial local address. Instead, the cited col. 4 discusses how a destination port may be translated to a port on the server.

The Examiner cited col. 14, lines 56-67 as disclosing the claim requirement of assigning different identifiers to the local interfaces previously assigned the initial local address in response to generating the at least one identifier. (Office Action, pg. 3) Applicants traverse.

The cited col. 14 mentions that a local director receives packets for a virtual machine and routes those packets to the physical machine port running the process expected to be run on the virtual machine port requested by the user. An object keeps track of a virtual IP address and port to which client is attempting to connect and the physical IP address and port assigned to the virtual IP address and port.

Nowhere does the cited col. 14 disclose assigning different identifiers to local interfaces assigned an initial local address in response to generating an identifier when multiple remote addresses are received. In other words, the cited col. 14 does not disclose assigning different identifiers to local interfaces assigned the initial local address in the initial configuration when the local interfaces receive different remote addresses from the connected remote interfaces. Instead, the cited col. 14 discusses how virtual addresses and ports map to physical ones. There is no disclosure how to assign identifiers to local interfaces assigned an initial local address when remote addresses are received from the remote interfaces connected to the local interfaces.

Accordingly, claims 2, 16, 30, and 33 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Coile.

Claims 4, 18, and 35 depend from claims 3, 17, and 34, respectively, and further require that each generated identifier comprises an additional port address, and configuring an additional port in the device for each generated additional port address and assigning local interfaces to the ports, including the additional port and port having the initial local address.

The Examiner cited col. 10, line 50 to col. 11, line 14 of Coile as disclosing the additional requirements of these claims. (Office Action, pg. 3) Applicants traverse.

The cited cols. 10-11 discuss a process to find a virtual machine to handle a new connection. Virtual machine objects are searched for a virtual machine object that corresponds to the source IP address of the new packet. The objects are checked to find a virtual port on the virtual machine. If a destination port is found, then a physical machine is selected to handle the connection. The data structures contain information to send packets to the appropriate physical machine which implements a virtual machine.

The claims require that the generated identifier, generated when different remote addresses are received from the remote interfaces, comprise additional port addresses, and that local interfaces are assigned to the port having an initial port address and the additional port. Nowhere do the cited cols. 10-11 disclose assigning local interfaces to different generated port addresses when multiple remote addresses are received from the remote interfaces connected to the local interfaces. Instead, the cited cols. 10-11 discuss how to find a virtual machine to handle a new connection, not how to assign local interfaces to different ports if multiple remote addresses are received from the remote interfaces connected to the local interfaces.

Accordingly, claims 4, 18, and 35 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Coile.

Claims 5, 19, and 36 depend from claims 4, 18, and 35, respectively, and further require the local interfaces assigned to one port connect to remote interfaces having a same remote address.

The Examiner cited col. 2, lines 44-65 as disclosing the additional requirements of these claims . (Office Action, pg. 3) Applicants traverse.

The cited col. 2 discusses a packet translation system for handling connections from clients to a plurality of IP addresses with a server. A packet interceptor intercepts incoming packets received at the client interface which have a packet destination IP address and port corresponding to a virtual machine IP address and port, which is translated to physical IP address and port.

Although the cited col. 2 discusses how a virtual IP address and port are translated to a physical address and port, nowhere does the cited col. 2 disclose that local interfaces assigned to one port connect to remote interfaces having a same remote address. There is no disclosure in the cited col. 2 that requires that local interfaces assigned to a port connect to remote interfaces having a same remote address. Instead, the cited col. 2 discusses how to translate virtual to physical ports and addresses.

Accordingly, claims 5, 19, and 36 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Coile.

Claims 8, 22, and 39 depend from claims 1, 15, and 32, respectively, and further require that the at least one remote device and a local device including the local interfaces implement the SAS architecture, wherein the local and remote addresses comprise SAS addresses, and wherein the local and remote interfaces comprise PHYs

The Examiner cited col. 7, line 54 to col. 8, line 20 of Coile as disclosing the requirements of these claims. (Office Action, pg. 4) Applicants traverse.

The cited cols. 7-8 discuss LAN interfaces, Ethernet interfaces, and FDDI interfaces. Applicants submit that nowhere do the cited cols. 7-8 disclose the use of the SAS architecture as claimed, where the local and remote addresses involve comprise SAS addresses. The Examiner has not cited any part of Coile that discloses the use of the SAS architecture as claimed.

Accordingly, claims 8, 22, and 39 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Coile.

Applicants submit that additional dependent claims 9-14, 23-28, and 40-46 provide further details on how local addresses are assigned to local interfaces based on whether multiple remote addresses are received from remote interfaces attached to the local interfaces.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-46 are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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